Fibromyalgia pain isn't all in patients' heads

A new brain-scan study confirms scientifically what fibromyalgia patients have been telling a skeptical medical community for years: They're really in pain.

In fact, the study finds, people with fibromyalgia say they feel severe pain and have measurable pain signals in their brains, from a gentle finger squeeze that barely feels unpleasant to people without the disease. The squeeze's force must be doubled to cause healthy people to feel the same level of pain, and their pain signals show up in different brain areas.

The results, published in the current issue of *Arthritis & Rheumatism*, the journal of the American College of Rheumatology (ACR), may offer the proof of fibromyalgia's physical roots that many doubtful physicians have sought. It may also open doors for further research on the still-unknown causes of the disease, which affects more than 2 percent of Americans, mainly women.

Lead authors Richard Gracely, Ph.D. and Dr. Daniel Clauw, who did the study at Georgetown University Medical Center and the National Institutes of Health, are now continuing the work at the University of Michigan Health System. In an editorial in the same issue, Clauw and U-M rheumatologist Dr. Leslie Crofford stress the importance of fibromyalgia research and care.

Connecting

To correlate subjective pain sensation with objective views of brain signals, the researchers used a super-fast form of MRI brain imaging, called functional MRI or fMRI, on 16 fibromyalgia patients and 16 people without the disease. As a result, they say, the study offers the first objective method for corroborating what fibromyalgia patients report they feel, and what's going on in their brains at the precise moment they feel it. And, it gives researchers a road map of the areas of the brain that are most – and least – active when patients feel pain.

■ Statistics show that far more women than men are affected, and that it occurs mostly during the childbearing years.

"The fMRI technology gave us a unique opportunity to look at the neurobiology underlying tenderness, which is a hallmark of fibromyalgia," says Clauw. "These results, combined with other work done by our group and others, have convinced us that some pathologic process is making these patients more sensitive. For some reason, still unknown, there's a neurobiological amplification of their pain signals."

History

For decades, patients and physicians have built a case that fibromyalgia is a specific, diagnosable chronic disease, characterized by tenderness and stiffness all over the body as well as fatigue, headaches, gastrointestinal problems and depression. Many patients with the disease find it interferes with their work, family and personal life. Statistics show that far more women than men are affected, and that it occurs mostly during the childbearing years.

The ACR released classification criteria for fibromyalgia in 1990, to help doctors diagnose it and rule out other chronic pain conditions. Clauw and Crofford's editorial looks at the current state of research, and calls for rheumatologists to take the lead in fibromyalgia care and science.

But many skeptics have debated the very existence of fibromyalgia as a clearly distinct disorder, saying it seemed to be rooted more in psychological and social factors than in physical, biological causes. Their argument has been bolstered by the failure of research to find a clear cause, an effective treatment, or a non-subjective way of assessing patients.

While the debate has raged, neuroscientists have begun to use brain scan technology to identify the areas of the normal human brain that become most active during pain. A few studies have even assessed the blood flow in those areas in fibromyalgia patients during baseline brain scans. The new study is the first to use both high-speed scanning and a painful stimulus.

New study

In the study, fibromyalgia patients and healthy control subjects had their brains scanned for more than 10 minutes while a small, piston-controlled device applied precisely calibrated, rapidly pulsing pressure to the base of their left thumbnail. The pressures were varied over time, using painful and non-painful levels that had been set for each patient prior to the scan.

The study's design gave two opportunities to compare patients and controls: the pressure levels at which the pain rating given by patients and control subjects was the same, and the rating that the two different types of participants gave when the same level of pressure was applied.

The researchers found that it only took a mild pressure to produce self-reported feelings of pain in the fibromyalgia patients, while the control subjects tolerated the same pressure with little pain.

"In the patients, that same mild pressure also produced measurable brain responses in areas that process the sensation of pain," says Clauw. "But the same kind of brain responses weren't seen in control subjects until the pressure on their thumb was more than doubled."

Though brain activity increased in many of the same areas in both patients and control subjects, there were striking differences too.

Patients feeling pain from mild pressure had increased activity in 12 areas of their brains, while the control subjects feeling the same pressure had activation in only two areas. When the pressure on the control subjects' thumbs was increased, so did their pain rating and the number of brain areas activated. But only eight of the areas were the same as those in patients' brains.

In all, the fibromyalgia patients' brains had both some areas that were activated in them but not in controls, and some areas that stayed "quiet" in them but became active in the brains of controls feeling the same level of pain. This response suggests that patients have enhanced response to pain in some brain regions, and a diminished response in others, Clauw says.

The study was supported in part by the National Fibromyalgia Research Association, the U.S. Army and the NIH. For more information on fibromyalgia research at UMHS, visit www.med.umich.edu/intmed/rheumatology/fmweb.

Free mammography guides help women make choices

The second annual Michigan Mammography Guide, compiled and published by the American Cancer Society, Great Lakes Division, and the Detroit Free Press, is available free of charge by calling the American Cancer Society at 1(800)ACS-2345.

The guide is the result of a survey of all 314 Michigan mammography facilities and contains information designed to help women make an informal decision on when and where to be screened for breast cancer.

The findings show that only four percent of Michigan mammography facilities are not in compliance with state and federal mammography laws.

"This is a very positive statement on the high quality of mammograms in this state," says Vicki Rakowski, vice president of cancer control for the American Cancer Society Great Lakes Division. The few violations that did occur were for minor administrative reasons. "What this really means is that safety and quality are no longer a major concern, so we can focus our attention instead to the problem of getting more women screened regularly."

The survey shows the median cost of a mammogram in Michigan is $138 with the least expensive at $63 and the most expensive at $332. Forty-two centers charge under $100 and the typical wait to get an appointment for a routine screening mammogram is 11 days.

Despite recent challenges to mammography, the American Cancer Society and other major health organizations are in strong agreement that the annual screening is a woman's best defense against breast cancer. American Cancer Society breast cancer screenings guidelines for all women 40 and older call for an annual screening mammogram, annual clinical breast exam by a health care professional, and monthly breast self-examination. Women 20-39 should have clinical breast exam by a health care professional every three years and should perform monthly self exams.

MEDICAL DATEBOOK

JUNE

SUMMER SHAPE-UP
St. Mary Mercy will offer its medically supervised HMR Weight Management Program this summer. Participants are required to attend a free one-hour orientation session 4-5 p.m. Wednesday, June 26. All sessions are held in Community Outreach Classroom 11 located in the lower level. To pre-register, call (734) 655.1783.

DEPRESSION
The University of Michigan Depression Center offers a "Family Education Workshop" 6-8 p.m. Monday, June 24, at the East Ann Arbor Health Center. Learn about depression's risk factors and treatments. Open discussion will be facilitated at the end of the session. $25 per person; $30 per family. Preregister by calling (734) 764-0267 or visiting www.med.umich.edu/depression.

GRIEF SUPPORT
Angela Hospice in Livonia offers ongoing grief support groups every second and fourth Tuesday of the month. Next meeting: 1 p.m. and 6:30 p.m. June 25. Call Ruth Favor, bereavement coordinator, at (734) 464-7810.

HEALTH FAIR
Heartland Health Care Center-Dorvin will offer a free health fair 2-4 p.m. Wednesday, June 26, *at 29270 Morlock (south of Eight Mile and west* of Middlebelt), Livonia. Attendees can have blood pressure screenings and meet with representatives from home health care, rehabilitation, general medical, and Alzheimer's care. Refreshments and door prizes. Call (248) 476-0555.

HEADACHES
Join Dr. Robert E. Potter, Jr. for a workshop on stress-induced headaches and migraines 7-8:15 p.m. Wednesday, June 26, at the Canton Center Chiropractic Clinic, 6231 N. Canton Center Road, Suite 109, Canton. Call (&34) 455-6767.

COMPLIMENTARY MEDICINE
The National Wellness Foundation will offer a support group meeting the fourth Thursday of each month. Anyone with health goals, questions or concerns is invited. The next meeting is 7 p.m. Thursday, June 27, at the Plymouth Library, downtown Plymouth. Call (734) 416-2442 or visit www.clc2.com.

JULY

FOOT CARE
Senior Health Services of Saint Joseph Mercy Health System will present a Senior Health Day 8:30-11:30 a.m. Tuesday, July 9, at SJM Health Stop, located in the Briarwood Mall just off I-94 at the State Street exit in Ann Arbor. "Personalizing Foot Care for Aging Feet" will feature podiatrist Dr. Mark Klein of St. Joseph Mercy Hospital. Bone density screening for a $5 donation began 8:30 a.m. Lecture at 10 a.m. Healthy food samples, gifts and prize drawings. Call (734) 827-3777.